

SOCIETIES AND ACADEMIES.

LONDON.

Royal Society, December 4.—Sir William Crookes, O.M., president, in the chair.—Sir Francis Darwin: A method of studying transpiration. The method is to close the stomata by coating the surface of the leaf with vaseline or some other grease, and then to place the intercellular spaces in connection with the outer air by cutting the leaf into strips. It is found by experience that such leaves transpire at rates comparable to those observed in natural leaves, and that they appear to behave normally in relation to external influences. In the present paper the effect of the relative humidity of the air is considered.—Sir Francis Darwin: The effect of light on the transpiration of leaves. The object of the research was to get a general idea of the differences in transpiration produced by alternate periods of diffused light and darkness. The experiments were made on the laurel (*Prunus laurocerasus*) and the ivy (*Hedera helix*), either by weighing or with the potometer. The results proved variable, and only by taking an average of a considerable number of experiments were figures of any sort of value obtained. For *Prunus* the average transpiration-rates in light and darkness are as 132:100; for ivy the figures are 136:100.—Prof. J. B. Farmer and L. Digby: Dimensions of chromosomes considered in relation to phylogeny. It is not possible to maintain that the width of chromosomes is a feature constant for the large phyla of the animal kingdom, inasmuch as not only are there appreciable individual differences, but in closely related species, e.g. lobster and prawn, this difference amounts to at least 60 per cent.—J. H. Mummery: The process of calcification in enamel and dentine. Although much has been written on the calcification of teeth, the actual mode of deposition of the lime salts has been very little investigated. The author shows that both in dentine and enamel the lime salts are deposited in the globular form, despite the chemical composition of the finished tissues.—A. Compton: The optimum temperature of salicin hydrolysis by enzyme action is independent of the concentrations of substrate and enzyme. The optimum temperature of the enzyme in question is independent alike of the concentration of the substrate and of the concentration of the enzyme.—C. F. U. Meek: The ratio between spindle lengths in the spermatocyte metaphases of *Helix Pomatia*.—Dr. A. P. Laurie, W. F. P. McIntock, and F. D. Miles: Egyptian blue. The purpose of the research is to decide the exact conditions under which the blue, manufactured and used in Egypt from the fourth dynasty to classical times, is produced, and to clear up the doubts as to its nature and constitution. The results of the investigation are to confirm the conclusion come to by Fouqué that the blue is a double silicate consisting principally of calcium and copper, but in which these metals can be partially replaced by alkalies. When soda, lime, and copper carbonate are heated with an excess of sand, a green glass is formed round the quartz particles at about 800° C. At about 840° the double silicate begins to crystallise out of this magma, again completely dissolving to form a green glass at 890° C. The discovery of this compound by the Egyptians is doubtless due to their practice of glazing small articles carved out of sandstone with a green copper glaze.

Royal Meteorological Society, November 19.—Mr. C. J. P. Cave, president, in the chair.—W. H. Dines: The daily temperature change at great heights. When observations by means of registering balloons were first started in England in 1907, it was soon found that the effect of solar radiation upon the thermometer was a matter that must be reckoned with. To

avoid the trouble, balloons were mostly sent up a little before sunset, and this policy continued until the meeting of the International Committee at Monaco in the spring of 1909. At that meeting the time of 7 a.m. was fixed for the international ascents, 7 a.m. being the time for which the morning weather chart is drawn. Since then, ascents have been made in England at the specified time, viz. 7 a.m., on the twenty-three specified days per annum. But other ascents have also been made on the international days and on days of special meteorological interest, such as the occurrence of thunder, or of a very high or very low barometer, and such ascents are mostly made in the evening. Some 200 good observations have been made in the British Isles, reaching to about 16 kilometres, concentrated into two nearly equal groups, one with its centre two hours after sunrise, and the other about a quarter of an hour after sunset. Mr. Dines has carefully discussed these records, and finds that above two kilometres and up to the isothermal column, the daily range of temperature, if it exists at all, does not exceed 2° C., and that the maximum is in the afternoon or evening.—H. Harries: The eddy winds of Gibraltar. The Rock rises to 1400 ft., and is very exceptionally situated at the entrance to the Mediterranean, and consequently gives rise to great eddies of wind. Mr. Harries on two visits to Gibraltar made some observations on these eddies at the summit signal station, 1310 ft., by means of small balloons and pieces of wadding and wool. As the observations were carried out under nearly calm and also very windy conditions the results are both curious and interesting, and may help to throw light on some of the atmospheric disturbances which are a source of trouble to aviators.

Linnean Society, November 20.—Prof. E. B. Poulton, F.R.S., president, in the chair.—H. J. Elwes: The travels of Sir Joseph Hooker in the Sikkim Himalaya. Hooker received in all 1100l. from Government, and the return was marvellous in comparison with that modest subsidy. The first year, 1849, was devoted to work to the westward, including a part of Nipal, as far as the Yangma valley, and ending in late autumn; the second year was spent in northward exploration as far as the Tibetan boundary at the Donkia pass. Besides the collection of a vast number of plants, Hooker observed the geology and meteorology of the country traversed, and plotted the map which was published in his "Himalayan Journals." A subordinate part was the despatch of more than 1000 packets of seeds to the elder Hooker, by whom they were distributed to many private gardens and nurseries, by which means European cultivators became possessed, amongst other things, of the Himalayan *Rhododendrons*. Of the literary results of these investigations may be mentioned the two volumes of the "Himalayan Journals," 1854, the splendid "Illustrations of Himalayan Plants," 1855, and the noble "Rhododendrons of the Sikkim Himalaya," brought out in 1849-51 by Sir William Hooker during his son's absence in India.

Zoological Society, November 25.—Prof. E. W. MacBride, F.R.S., vice-president, in the chair.—Orjan Olsen: A new Rorqual from the coast of South Africa. A detailed account was given of external characters, biology, and distribution.—Miss Marie V. Lebour: A new species of Trematodes of the genus *Lechriorchis*. The species was found in the body-cavity of a dark green snake (*Zamenis gemonensis*) that had died in the society's gardens.—T. H. Withers: Cirripede remains from the Cenomanian Chalk Marl in the neighbourhood of Cambridge. The greater number of the specimens are referred to two species of the family *Pollicipedidæ*, and add materially to our knowledge of the phylogeny of the pedunculated Cirripedes. Both

forms are remarkable for their advanced form of scutum, in which the umbo is subcentral, and show that the transition of the scutal umbo from an apical to a subcentral position was acquired independently by unrelated forms in distinct lines of development.—Dr. P. Chalmers Mitchell: The peroneal muscles in birds. The author had dissected these muscles in more than 300 birds, and believed that he was able to give a nearly exhaustive account of the varieties of form presented by these structures. The paper described the peroneal muscles in *Chauna chavaria*, and gave a systematic account of the conditions in the different avian groups which could all be represented as derivatives of the *Chauna* condition by loss of certain portions and increased development of other portions.

Royal Anthropological Institute, November 26.—Prof. A. Keith, F.R.S., president, in the chair.—M. Fr. de Zeitner: The Touareg. The Touareg inhabit a region from the 7th degree of W. longitude to the 6th degree of E. longitude, and the author had explored the whole of this territory from east to west, reaching as far north as Aoudéras, about 150 km. north of Agadez, the capital of Air. The main object of the author's expeditions in 1910–11–12 was the anthropological study of the southern Touareg, of whom he measured 145 individuals, three being women. He was able to discover that, despite a certain amount of intermixture, the race presented a great homogeneity, and that it differed distinctly from the neighbouring groups—negroes, Hausa, Peulh, and Moors. Its customs were exclusively feudal, and women played a very important rôle amongst the Touareg, while they were treated with but little consideration amongst their neighbours. Although the Touareg were warriors above everything, yet one could conclude that they were commencing to adapt themselves to a settled life. As their pillaging expeditions became from day to day more difficult, a number of them were beginning to devote themselves to agriculture, forcing their captives to work, and obtaining good results therefrom. Internally there was absolute tranquillity in the Touareg country.

December 2.—Prof. A. Keith, F.R.S., president, in the chair.—Dr. W. Hildburgh: Japanese minor magic connected with the propagation and infancy of children. The lecturer prefaced his paper by describing the kind of magic to be dealt with as principally non-professional, and performed by the ordinary man or woman as distinguished from the professional magician. Starting with various magical cures for, or means for avoiding, barrenness, Dr. Hildburgh showed how some of these depended upon the transference of the soul of a living or dead person to the barren woman, while others depended upon the simulation of a birth, or other mimetic means. Passing then to pregnancy, he discussed the magical means for assuring the safety of the unborn child by protecting it from the attacks of malignant demons and from the effects of inadvertent acts of the mother, and those for predicting its sex and for assuring that the sex should be as desired.

Faraday Society, November 26.—Mr. W. R. Bousfield, vice-president, in the chair.—E. Vanstone: The electrical conductivities of sodium amalgams.—A. C. Rivett and E. I. Rosenblum: The influence of a second solute on the solubility of *ortho*-phthalic acid.

Society of Chemical Industry, December 1.—Dr. W. R. Hodgkinson in the chair.—Dr. E. J. Russel and W. Buddin: The use of antiseptics in increasing the growth of crops in soil. The action of antiseptics on the soil is shown to be complex, but the most impor-

tant for the present purpose is that the micro-organic population of the soil is very considerably simplified. The higher forms of life are killed when sufficient antiseptic is added, and the bacteria are greatly reduced in numbers. If the antiseptic is volatile or easily removed from the soil a remarkable result is obtained shortly after it has gone. The bacterial numbers do not remain low, but they begin to rise, and finally attain a level much exceeding that of the original soils. Simultaneously there is an increase in the rate of ammonia production in the soil; the evidence shows that this is the direct result of the increased numbers of bacteria. The increased ammonia production, however, does not set in if a large amount of ammonia and nitrate is already present in the soil. This increased production of ammonia induces a larger growth than in the untreated soils; antiseptics, therefore, tend to have the same action as nitrogenous fertilisers, and could be used to supplement them in practice. The antiseptics used should be destructive to disease organisms, pests, and organisms detrimental to the ammonia-producing bacteria, be capable of being removed from the soil either by volatilisation, oxidation, or decomposition, be convenient in application, and not be absorbed too readily by the soil, or proper distribution cannot take place. Of the various compounds tried during the last three years formaldehyde is the best; then comes pyridine, and then cresol, phenol, carbon disulphide, toluene, and others. None of these are so good as steam, but the subject is yet in its infancy, and there is no reason to doubt that suitable antiseptics will yet be found.

CAMBRIDGE.

Philosophical Society, November 17.—Dr. Shipley, president, in the chair.—Dr. Doncaster: A possible connection between abnormal sex-limited transmission and sterility. In a previous paper it was shown that the rare tortoiseshell male cat probably arises by a failure of the normal sex-limited transmission of the orange colour by the male. The present communication gives evidence that the tortoiseshell male exhibited is sterile. Two females of the moth *Abraxas grossulariata* in which the normal sex-limited transmission of the *grossulariata* pattern had failed were also sterile; it is therefore suggested that the sterility may be correlated with transmission of a character to a sex which does not normally receive it.—E. Hindle: The flight of the house-fly. The paper contains a description of experiments on the range of flight of the house-fly, conducted in Cambridge during the summer of 1912. The results obtained indicate that flies tend to travel either against or across the wind. The chief conditions favouring their dispersal are fine weather and a warm temperature. The maximum flight in thickly housed localities seems to be about a quarter of a mile, but in one case a single fly was recovered at a distance of 770 yards. It should be noted, however, that part of this distance was across open country.—H. H. Brindley: Sex proportions of *Forficula auricularia* in the Scilly Islands. In view of collections of the common earwig obtained from two of the islands in 1911 showing as considerable differences in the proportions of the sexes as had been previously observed in collections from various localities in England and Scotland (Proceedings, vol. xvi., part 8, 1912, p. 674), a visit was made to the Islands in August last year. Collections were made in all the five inhabited and seven of the uninhabited islands. There are great differences in the proportions of the sexes in the various islands. The range for different localities on a single island is not great. The evidence that the characters of the soil and vegetation show any relation with the sex propor-

tions is very slight. The sex proportions in the Scilly Isles show very slight relation with the positions of the islands as regards each other.

MANCHESTER.

Literary and Philosophical Society, November 4.—Mr. Francis Nicholson, president, in the chair.—Prof. Edmund Knecht and Miss E. Hibbert: Note on some products isolated from soot. The authors gave an account of the laborious work involved in isolating definite organic compounds from soot collected from household chimneys round Manchester. Three of these were obtained, and were described. One such compound is an unsaturated solid hydrocarbon, cerotene, which was isolated in 1783 by König and Kiesow from hay, this being the only other known source. Another substance, obtained in the form of a pure yellow oil, appears to be of the nature of a higher alcohol, and a solid organic acid was also isolated.—Prof. H. C. H. Carpenter: The crystallising properties of electro-deposited iron. Specimens of electro-deposited iron sheet of a high degree of purity have been found to exhibit remarkable recrystallisation effects when heated above the Ac₃ change, and then cooled below the Ar₃ change. In this way relatively enormous crystals are formed in three seconds after cooling below Ar₃. The coarse crystals are sometimes "equi-axed" and sometimes "radial." Frequently both types occur on the same specimen. There is no reason for thinking that they are constitutionally different, and they are most probably α iron. These crystallisation effects are only obtained when the thickness of the iron sheet or strip does not exceed a certain critical figure, which is between 0.011 and 0.012 of an inch. The coarse crystals once formed can only be destroyed either by mechanical work or by heating above Ac₃ followed by quenching, or by very prolonged heating above Ac₃ followed by ordinary cooling rates. The same heat treatment which produces coarse crystals in the electro-deposited iron refines wrought-iron and very mild steel that have been rendered coarsely crystalline by "close-annealing" between 700° and 800° C. On the other hand, annealing at 700° to 800° C. has no effect in coarsening the structure of the electro-deposited iron which has been refined by cold mechanical work. In these respects, therefore, the behaviour of electro-deposited iron is precisely the opposite of that of wrought-iron and mild steel.

EDINBURGH.

Royal Society, November 17.—Prof. J. Geikie, F.R.S., president, in the chair.—Dr. F. Kidston Fossil flora of the Westphalian Series of the South Staffordshire Coalfield. More than 150 species were described, some of them being recorded for the first time as British. A few new species were also described.—Prof. Margaret J. Benson: *Sphaerostoma ovale* (*Conostoma ovale et intermedium*, Williamson), a Lower Carboniferous *Ovale* from Pettycur, Fifeshire. The paper also contained the description of a seed referable to Pteridosperms, and possibly belonging to *Heterangium Grievii*, Williamson.—Prof. C. R. Marshall: Studies on the pharmacological action of tetra-alkyl-ammonium compounds. I., The action of tetra-methyl-ammonium chloride. This substance produces paralysis of the myoneural junctions in mammals and frogs. In anæsthetised mammals the intravenous injection of certain doses causes temporary cessation of the respiration, which was found to be synchronous with the paralysis of the nerve-endings in the muscles of the anterior end of the body. The respiratory paralysis was also found to occur after division of both fifth cranial nerves, and therefore could not be due, as has been stated, to stimulation of

the endings of these nerves. It was further shown that the effect was not synchronous with the action on the circulation.—Dr. T. Muir: The theory of bi-gradients from 1859 to 1880.

PARIS.

Academy of Sciences, December 1.—M. F. Guyon in the chair.—Paul Appell: The development of $(x-y)^{-1}$ in series proceeding according to the inverse of given polynomials.—M. Righi was elected a correspondant for the section of physics in the place of the late M. Bosscha, and M. Grignard a correspondant in the section of chemistry in the place of M. Sabatier, elected non-resident member.—André Broca and Ch. Florian: A practical level with a damped mercury bath. The movements of the sheet of mercury are deadened by covering with a thin layer of glycerol, the latter being covered by a sheet of plane glass. Numerous possible applications of the instrument are suggested.—Henri Chrétien: Statistical analysis of star clusters.—A. Demoulin: A characteristic property of the families of Lamé.—E. Vessiot: The reducibility of differential systems.—Serge Bernstein: Some asymptotic properties of polynomials.—F. La Porte: Modifications of the coast of Brittany between Penmarch and the Loire. Near Morbihan the coast-line is the same as in 1821; elsewhere the coast-line has retreated, except at Carnac, where 80 to 100 metres have been gained from the sea.—A. Korn: The origin of terrestrial magnetism.—F. Croze: The peculiarities of the Zeeman phenomenon in the series spectra of oxygen and hydrogen.—A. Cotton, H. Mouton, and P. Drapier: The optical properties of a mixed liquid submitted simultaneously to an electric and a magnetic field.—G. Ribaud: The quantitative study of the absorption of light by the vapour of bromine in the ultra-violet. From the results of the experiments the kinetic theory of light absorption does not hold for the large bands; for five lines the theory is in good agreement with observation.—L. Dunoyer: An experiment in optical resonance on a gas in one dimension.—G. Moreau: Couples consisting of two flames. Two Bunsen flames burn vertically in contact, one containing the vapour of an alkaline salt. In each flame is a platinum electrode, from which, under conditions detailed in the paper, a current amounting to several microamperes can be obtained.—R. Boulouch: Systems of centred spherical diopters: ordinary stigmatism and aplanatism.—E. Aries: The laws of displacement of chemical equilibrium at constant temperature or at constant pressure.—P. Teilhard de Chardin: A formation of carborophosphate of lime of the Palæolithic age.—A. Prunet: The fungi which cause in France the disease (*piétin*) of cereals. This name is applied to diseases due to the attacks of three different species of fungi.—J. Stoklasa and V. Zdornicky: The influence of the radio-active emanations on vegetation. In small amounts, the radium emanations favour plant growth, but above a certain quantity the contrary effect is observed.—E. J. Hirtz: A new reaction in electrodiagnosis.—Philippe de Vilmorin: The hereditary characters of tailless and short-tailed dogs.—Y. Manouélian: Histological study of the destruction of the acini in the salivary glands in rabid animals.—Adrien Lucet: Experimental researches on coccidiosis of the domestic rabbit.—L. Gaumont: Contribution to the study of the black fly of the beet.—F. Ducháček: A supposed biochemical variation of the Bulgarian lactic bacillus. A criticism of some conclusions of Effront on the variation of the Bulgarian bacillus.—Auguste Lumière and Jean Chevrotier: A new culture medium very suitable for the development of the gonococcus.—C. Bruyant: The peat bogs of the massif of Mont Dore.—E. A. Martel: Experiments with fluorescein at great distances. In connection with the

use of dyestuffs with great tinctorial properties, such as fluorescein, in tracing the path of underground water-courses, it is shown that the dye need not be previously brought into solution if the water is flowing, and that very large quantities of the colouring matter must be employed if erroneous conclusions are to be avoided. One hundred kilos. of fluorescein were used in one successful experiment.

CALCUTTA.

Asiatic Society of Bengal, November 5.—H. B. **Preston**: A molluscan faunal list of the Lake of Tiberias with descriptions of new species. The paper deals in the first instance with a large collection made by Dr. Annandale at and near Tiberias in October, 1912. A remarkable feature of the molluscan fauna of the Lake of Tiberias is the thickness of the shells of most of its constituent species and the almost complete absence of thin-shelled forms. This is probably due to the large amount of mineral matter held in suspension in the water. The distribution of the different species is discussed under the heading of each, and several new species and varieties are described. With the exception of a species of *Unio*, these are for the most part minute shells.—R. H. **Whitehouse**: The Planarians of the Lake of Tiberias. Three species of Planaria were taken in the immediate vicinity of the Lake of Tiberias, from which no representative of the group has hitherto been identified specifically.—Dr. G. **Horváth**: Aquatic and semi-aquatic Rhynchota from the Lake of Tiberias and its immediate vicinity. The collection made includes seventy-nine specimens of aquatic and semi-aquatic Rhynchota, representing twenty-one species, of which three are new to science.—Dr. N. **Annandale**, J. C. **Brown**, and F. H. **Gravely**: The limestone caves of Burma and the Malay Peninsula. This paper is divided into three portions. The first is introductory and gives a general account of the caves of Burma and the Malay Peninsula, a history of the literature which has ground up around them since the early days of the eighteenth century, and particulars of their archaeology and folklore. Part i. is by J. Coggin Brown, and deals with the geology of the cave-bearing limestones of Burma and the Malay Peninsula. The opinion is expressed that on thorough examination many of the limestone caves of Burma and the Malay Peninsula will be found to contain deposits with recent or subrecent fossil remains. Part ii. is by N. Annandale and F. H. Gravely, and consists of an account of the fauna of the caves. Although both blind and purblind species are included in the list, no animal as yet recorded from these caves has reached the height of specialisation sometimes developed by a cavernicolous existence; such, for example, as is found in the case of certain species from the caves of Europe and North America. An appendix contains notes by Ch. Duroiselle and B. B. Binyabinode on clay votive tablets from the caves.

BOOKS RECEIVED.

Studies in Career and Allied Subjects. Pathology. Vol. ii. Pp. vi+267+xxxii plates. Vol. iv. Contributions to the Anatomy and Development of the Salivary Glands in the Mammalia. Pp. v+364+c plates. (New York: The Columbia University Press.) Each 5 dollars net.

Les Inconnus de la Biologie déterministe. By A. de Gramont Lesparre. Pp. 297. (Paris: F. Alcan.) 5 francs.

Das Relativitätsprinzip. By L. Gilbert. Pp. 124. (Brackwede i.W.: Dr. W. Breitenbach.) 3 marks.

Einführung in die Tierpsychologie auf experiment-
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elle und ethnologischer Grundlage. By G. Kafka. Erster Band. Die Sinne der Wirbellosen. Pp. xii+594. (Leipzig: J. A. Barth.) 18 marks.

Report of the Interstate Conference on Artesian Water. Sydney, 1912. Pp. xv+207+68; maps and plates. (Sydney: W. A. Gullick.)

Société Française de Physique. Recueil de Constantes Physiques. By Profs. H. Abraham and P. Sacerdote. Pp. xvi+753. (Paris: Gauthier-Villars.) 50 francs.

Proceedings of the Royal Irish Academy. Vol. xxxi. Clare Island Survey. Part 64. Foraminifera. By E. Heron-Allen and A. Earland. Pp. 188+13 plates. (Dublin: Hodges, Figgis and Co., Ltd.; London: Williams and Norgate.) 5s. 6d.

Annals of the Transvaal Museum. Vol. iv., part 2. (Pretoria: Government Printing and Stationery Office.) 7s. 6d.

The Bodley Head Natural History. By E. D. Cuming. Vol. ii., British Birds. Passeres. Pp. 122. (London: J. Lane.) 2s. net.

Bulletin of the British Ornithologists' Club. No. cxc. (1) Guide to Selborne. (2) Synopsis of the Life of Gilbert White. By W. H. Mullens. Pp. 27. (London: Witherby and Co.) 2s. 6d. net.

A Pilgrimage of British Farming, 1910-12. By A. D. Hall. Pp. xiii+542. (London: J. Murray.) 5s. net.

Annals of the South African Museum. Vol. vii.; vol. xii., part 1. (Cape Town: South African Museum; London: West, Newman and Co.) 1s. and 14s.

Linne's Föreläsningar öfver Djurriket. Med Understöd of Svenska Staten för Uppsala Universitet. By E. Lönnberg. Pp. xiii+607. (Uppsala: A. B. Akademiska Bokhandeln; Berlin: R. Friedländer und Sohn.)

The Fungi which Cause Plant Disease. By Prof. F. L. Stevens. Pp. viii+754. (London: Macmillan and Co., Ltd.)

Quantitative Analysis by Electrolysis. By A. Classen, with the cooperation of H. Cloeren. Translated by W. T. Hall. Pp. xiv+308+2 plates. (New York: J. Wiley and Sons; London: Chapman and Hall, Ltd.) 10s. 6d. net.

Logging: the Principles and General Methods of Operation in the United States. By Prof. R. C. Bryant. Pp. xviii+590. (New York: J. Wiley and Sons; London: Chapman and Hall, Ltd.) 15s. net.

Outlines of Theoretical Chemistry. By Prof. F. H. Getman. Pp. xi+467. (New York: J. Wiley and Sons; London: Chapman and Hall, Ltd.) 15s. net.

Constructive Text-Book of Practical Mathematics. By H. W. Marsh. Vol. ii., Technical Algebra. Part i. Pp. xvii+428. (New York: J. Wiley and Sons; London: Chapman and Hall, Ltd.) 8s. 6d. net.

Marsh's Mathematics Work-Book. Designed by H. W. Marsh. (New York: J. Wiley and Sons; London: Chapman and Hall, Ltd.) 3s. net.

Der Gerbstoffe: Botanisch-chemische Monographie der Tannide. By Dr. J. Dekker. Pp. xiii+636. (Berlin: Gebrüder Borntraeger.) 20 marks.

Prehistoric Times. By the late Rt. Hon. Lord Avebury. Seventh edition, thoroughly revised. Pp. 623. (London: Williams and Norgate.) 10s. 6d. net.

The British Journal Photographic Almanac, 1914. Edited by G. E. Brown. Pp. 1496. (London: H. Greenwood and Co.) 1s. 6d. net

Traité de Géographie Physique. By Prof. E. de Martonne. Deux. édition. Pp. xi+922. (Paris: A. Colin.) 22 francs.

The Sampling and Assay of the Precious Metals. By E. A. Smith. Pp. xv+460. (London: C. Griffin and Co., Ltd.) 15s. net.